Success with intelligent transport systems measures and improving energy efficiency

Jakapong Pongthanaisawan, PhD.
Senior Policy Researcher
National Science Technology and Innovation Policy Office (STI), Thailand

TECHNICAL EXPERT MEETING ON MITIGATION
Shifting to more efficient public transport and increasing energy efficiency of vehicles

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Bonn, Germany
**Energy Efficiency Plan (EEP)**

**Economic Sector**

1. Industry
2. Commercial
3. Residential
4. Transportation

### Expected Energy Saving by Economic Sector

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>Total (ktoe)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EE1</td>
<td>5,156</td>
<td>10%</td>
</tr>
<tr>
<td>EE2</td>
<td>1,166</td>
<td>2%</td>
</tr>
<tr>
<td>EE3</td>
<td>4,149</td>
<td>8%</td>
</tr>
<tr>
<td>EE4</td>
<td>9,524</td>
<td>18%</td>
</tr>
<tr>
<td>EE5</td>
<td>991</td>
<td>2%</td>
</tr>
<tr>
<td>EE6</td>
<td>500</td>
<td>1%</td>
</tr>
<tr>
<td>EE7</td>
<td>30,213</td>
<td>58%</td>
</tr>
<tr>
<td>Total (ktoe)</td>
<td>51,700</td>
<td>100%</td>
</tr>
</tbody>
</table>

**A Target to reduce Energy Intensity by 30% in 2036, compared with that in 2010**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Energy Intensity (ktoe/billion baht)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI (2010) actual</td>
<td>15.28</td>
</tr>
<tr>
<td>EI (2013) actual</td>
<td>14.93</td>
</tr>
<tr>
<td>EI (2030) forecast</td>
<td>11.0</td>
</tr>
<tr>
<td>EI (2036) forecast</td>
<td>10.7</td>
</tr>
</tbody>
</table>

**Assumption;**

- GDP Growth 3.8%
- Population Growth 0.03%

**Source:** Energy Policy and Planning Office (2015)
Sustainable transport instruments

Potential Strategy Responses - Reducing GHG Emissions

- **AVOID**
  - PREI
  - Travel does not take place
  - Need/desire to travel has been reduced

- **SHIFT**
  - PREIT
  - Non-motorised transport
  - Walking and cycling
  - Public motorised transport
  - Public transport – bus, rail

- **IMPROVE**
  - REIT
  - Individual motorised transport
  - Car, motorcycles, taxi

Travel / Mode Choices
- Decision to travel or not to travel and by which mode affects fuel consumption, and therefore carbon emissions:
  - Number of vehicles, level of congestion, driver behaviour, vehicle condition, fuel type

Energy Demand and Carbon Emissions

Key to Available Instruments
- Planning Instruments (P)
  - Land use planning (master planning), planning / providing for public transport and non-motorised modes

- Regulatory Instruments (R)
  - Physical norms and standards (emissions limits, safety), traffic organisation (speed limits, parking, road space allocation), production processes

- Economic Instruments (E)
  - Fuel taxes, road pricing, subsidies, purchase taxes, fees and levies, emissions trading

- Information Instruments (I)
  - Public Awareness Campaigns, mobility management and marketing schemes, co-operative agreements, eco-driving schemes

- Technological Instruments (T)
  - Fuel improvement, cleaner technologies, end-of-pipe control devices, cleaner production

Source: GIZ (2010), Transport and Climate Change
What are Intelligent Transportation Systems (ITS)?

The application of advanced sensor, computer, electronics, and communications technologies and management strategies - in an integrated manner - providing traveler information - to increase the safety and efficiency of the surface transportation system.

US DOT Instructional Manual
Areas of ITS application in Thailand

- **Traffic Management**: maximizing the efficiency of the existing infrastructure

- **Traveler Information**: provide real-time multi-modal travel information for private & transits users, commercial traffic & tourists
Areas of ITS application in Thailand

- **Public Transport/Transit Management**: provide more reliable, flexible services and reduce travel times

- **Commercial vehicle operations**: improve efficiency of operations
Further Applications of ITS in Thailand

Next Generation ITS
- Computer
- Telecommunication
- Data management
- Automotive
- Mapping, positioning

Areas of Application
- Park and Ride
- Shuttle Bus
- Link Flow
- Traffic Management

What we can see from ITS?
- Safety
- Efficiency (Reduce Traffic Congestion)
- Convenience/Comfort
- Environment
- Productivity

http://www.sathornmodel.com/home
Reducing GHG Emissions from Transport by Improving Public Transport Systems through Capacity Building and Use of Technology: Capacity Building in Thailand

15 – 19 February 2016 in Bangkok and Chiang Mai, Thailand

• The first south-south collaboration between National Designated Entities (NDEs) with supported by Climate Technology Centre and Network (CTCN)
• To provide the Bhutan’s participants with an overview of the Thai experiences, both in Bangkok and Chiang Mai, with intelligent transport systems and public transport systems by Thai intelligent transport system (ITS) experts